WHAT IS CLAIMED IS:

1. An inductive coupler for coupling a signal to a power line, comprising:
a magnetic core for placement about said power line;
a coil wound around a portion of said magnetic core, wherein said signal is coupled to said coil; and
a semiconducting coating that encapsulates said core and contacts said power line.

2. The inductive coupler of claim 1,
wherein said core has a longitudinal end, and
wherein said inductive coupler further comprises a rounded semiconducting body that covers said longitudinal end and is in electrical contact with said semiconducting coating.

3. The inductive coupler of claim 1,
wherein said core has a rounded longitudinal end, and
wherein said semiconducting coating covers said rounded longitudinal end.

4. The inductive coupler of claim 1,
wherein said coil has a lead emerging from said core,
wherein said lead is coated with a layer of insulation, and
wherein said inductive coupler further comprises a semiconducting layer over said layer of insulation.

5. The inductive coupler of claim 1,
wherein said coil has a lead emerging from said core, and
wherein said inductive coupler further comprises a semiconducting layer over said lead.

6. The inductive coupler of claim 1,

wherein said coil has a section of high voltage cable coated with semiconducting material, said semiconducting material being in conductive or capacitive contact with said semiconducting coating, and

wherein said inductive coupler further comprises a stress cone at an end of said coil.

7. An inductive coupler for coupling a signal to a power line, comprising:

a magnetic core for placement about said power line; and

a coil wound around a portion of said magnetic core,

wherein said coil includes a coaxial cable having an outer conductor at power line potential, and

wherein said cable includes an end with a stress cone.